

PHILCO MODEL 46-427

TRADE NAME	Philco Model 46-427
MANUFACTURER	Philco Corp., Tioga & C Streets, Philadelphia, Pa.
TYPE SET	AC - DC 2 Band Superheterodyne - Self Contained Loop Antenna
TUBES (SIX)	Types 14AF7 Converter, 7B7 1st IF Amp., 7B7 2nd IF Amp., 7C6 2nd Det.-AVC-1st Audio, 50L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	115 Volts AC-DC Rating .245 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1720KC
SHORT WAVE	9.0-15.5MC

ALIGNMENT INSTRUCTIONS

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.05 MFD	High side to ant. stator section of tuning gang. Low side to B-.	455KC	BC	Low freq. end of dial.	Across voice coil. Left and center lugs on terminal strip at rear of chassis.	A1, A2, A3, A4	Adjust for maximum output. Preset A4 by turning it down tight. Then adjust in order including A4. Use isolation transformer if available. If not, isolating capacitor must be connected between generator ground lead and receiver B-. Also decrease dummy to .001 MFD to prevent excessive hum modulation.
"	High side to ant. connection (right hand lug) on terminal strip at rear of chassis. Low side to B-.	1700KC	"	1700KC	"	A5	Preset A7 by turning it down tight and backing off 1/3 turn. Adjust A5 for maximum output. Use isolating instructions given for IF's.
"	"	1500KC	"	Tune to 1500 KC signal.	"	A6	Adjust for maximum output. Use isolation instructions.
"	"	600KC	"	Tune in 600 KC signal.	"	A7	Adjust for maximum output. Rock dial. Use isolation instructions.
"	"	"	"	"	"	"	Repeat adjustments on A5 and A6 in order and at frequencies given.
"	"	15MC	SW	15MC	"	A8, A9	Adjust for maximum output. Use isolation instructions.

Volume control at maximum and output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA		INSTALLATION NOTES
		PHILCO PART No.	STANDARD REPLACEMENT	
1	Converter	14AF7XXD	14AF7XXD	
2	1st IF Amp.	7B7	7B7	
3	2nd IF Amp.	7B7	7B7	
4	1st AF Amp.	7C6	7C6	
5	Output	50L6GT	50L6GT	
6	Rectifier	35Z5GT	35Z5GT	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REPLACEMENT DATA				IDENTIFICATION CODES AND INSTALLATION NOTES
		PHILCO PART No.	MALLOY PART No.	SOLAR PART No.	SPRAGUE PART No.	
7(A)	20	30-2541	2N509	DEN-2420-150	TA-220	Filter - Red
8	150					Line Filter
9	.04	30-4119	TP425	S-8-D4	TC-14	RP Bypass Rect.
10	.04	30-4119	TP425	S-8-D4	TC-14	50L6 Plate Bypass
11	.02	30-4599	TP423	S-4-02	TC-12	Audio Coupling
12	.01	400	TP421	S-4-01	TC-11	AFC Filter
13	.01	400	TP421	S-4-01	TC-11	Line Isolating Trap
14	.02	30-4518	TP425	S-4-05	TC-15	Screen Bypass
15	.02	30-4518	TP425	S-4-05	TC-15	Line Isolating
16	.008	30-4504	TP426	S-4-08	TC-16	Plate Decoupling
17	.01	400	TP421	S-4-01	TC-11	Osc. Coupling
18	.05	200	TP426	S-4-05	TC-15	50L6 Cath. Bypass
19	.05	400	TP426	S-4-05	TC-15	Osc. Feedback
20	250	500	NC240	M-5-325	1FM-325	Osc. Grid Cond.
21	250	500	NC240	M-5-325	1FM-325	RF Coupling
22	50	500	NC225	M-5-45	1FM-45	Osc. Coupling S.M.
23	250	500	NC240	M-5-325	1FM-325	Fixed Pad
24	6	500	NC205	M-5-55	MS-55	
25	275	500				
26	500	30-1220-7				

*Used in Later Models
†May be 300 MMF in Some Models

CONTROLS

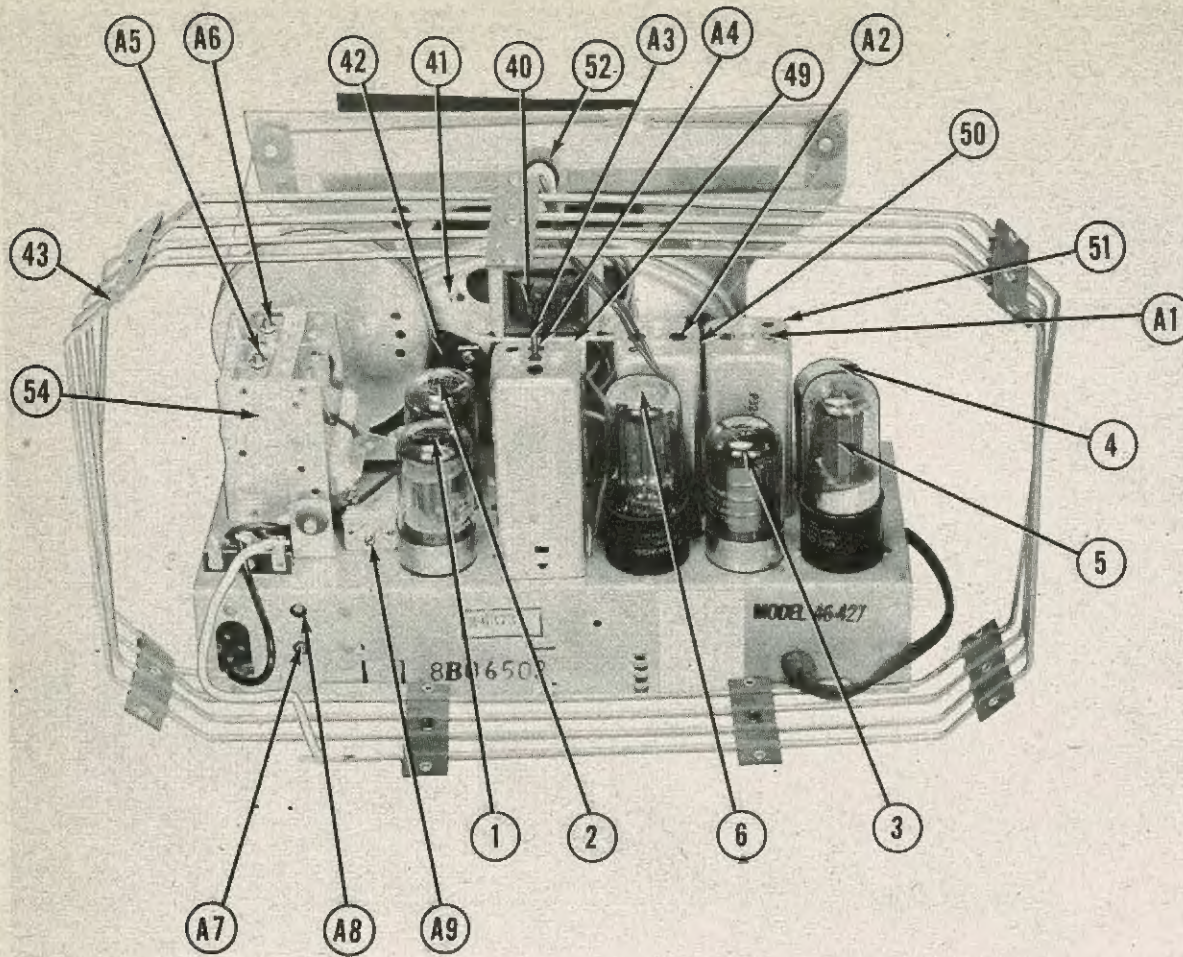
ITEM No.	RATING	RESISTANCE	WATTS	REPLACEMENT DATA			INSTALLATION NOTES
				PHILCO PART No.	MALLOY PART No.	IRC PART No.	
27(A)	500KΩ	1		Not Req.	Not Req.	D13-133	Volume Control
27(B)	Shaft			Not Req.	Not Req.	A	Attach to 27A per instructions
27(C)	Switch			Not Req.	Not Req.	41	

RESISTORS

ITEM No.	RATING	RESISTANCE	WATTS	REPLACEMENT DATA		IDENTIFICATION CODES
				PHILCO PART No.	IRC PART No.	
28	470Ω			83-2673340	BTS-47K	Y1-V1-Or. Osc. Grid
29	220Ω			86-2223340	BTA-220K	Red-Red-Red Converter Cathodes
30	2.2 Meg.			86-5223340	BTS-2.2 Meg	Red-Red-Orn. AVC Network
31	10KΩ			86-5103340	BTS-10K	Br.-Blk.-Or. Rec. Plate Load
32	10KΩ			86-5103340	BTS-10K	Br.-Blk.-Or. Plate Filter
33	15KΩ			86-5153340	BTA-15K	Br.-Orn.-Or. Screen Dropping
34	2.2 Meg.			86-5223340	BTS-2.2 Meg	Red-Red-Orn. AVC Network
35	4.7 Meg.			86-5473340	BTS-4.7 Meg	Y1-V1-V1. 1st AF Grid
36	470KΩ			86-4473340	BTS-470K	Y1-V1-V1. 1st AF Plate Load
37	470KΩ			86-4473340	BTS-470K	Y1-V1-V1. Output Grid
38	120KΩ			86-1133340	BW-120K	Br.-Or.-Br. Output Cathode
39	120KΩ			86-1133340	BW-120K	Br.-Red-Y1. Line Isolating *

*Not Used in all Models.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS TRANSFORMER (OUTPUT)

ITEM No.	RATING		REPLACEMENT DATA		INSTALLATION NOTES
	IMPEDANCE	DC RES.	PHILCO PART No.	THORDARN PART No.	
40	2250Ω 2.6Ω	192Ω	Part of 36-1533	A-3976 T-13542#	#Band one mounting tab under and solder to the original bracket.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA		INSTALLATION NOTES
	FIELD	VC IMP.	PHILCO PART No.	JENSEN PART No.	
41	500Ω	2-3W	36-1533	NONE	
42	4"x3"	VC DIA.	NOT READILY REPLACABLE-USE COMPLETE SPEAKER UNIT.		

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		INSTALLATION NOTES
		PRI.	SEC.	PHILCO PART No.	MEISSNER PART No.	
43	Loop Ant. Coil	0Ω	1.4Ω	76-1279		
44	EC Ant. Coil	.1Ω		32-4008		
45	SW Ant. Coil	0Ω		32-3716		
46	EC Osc. Coil	8Ω		32-3991		Part of 32-3991
47	SW Osc. Coil	0Ω				" " "
48	Grid Coupl. Coil	.8Ω				" " "
49	Input IF Coil	.9Ω		32-3956		From diode to white lead 40.5KΩ - to blk. lead 650KΩ
50	Interstage IF	9Ω		32-3957		
51	Output IF	52Ω		32-3958		

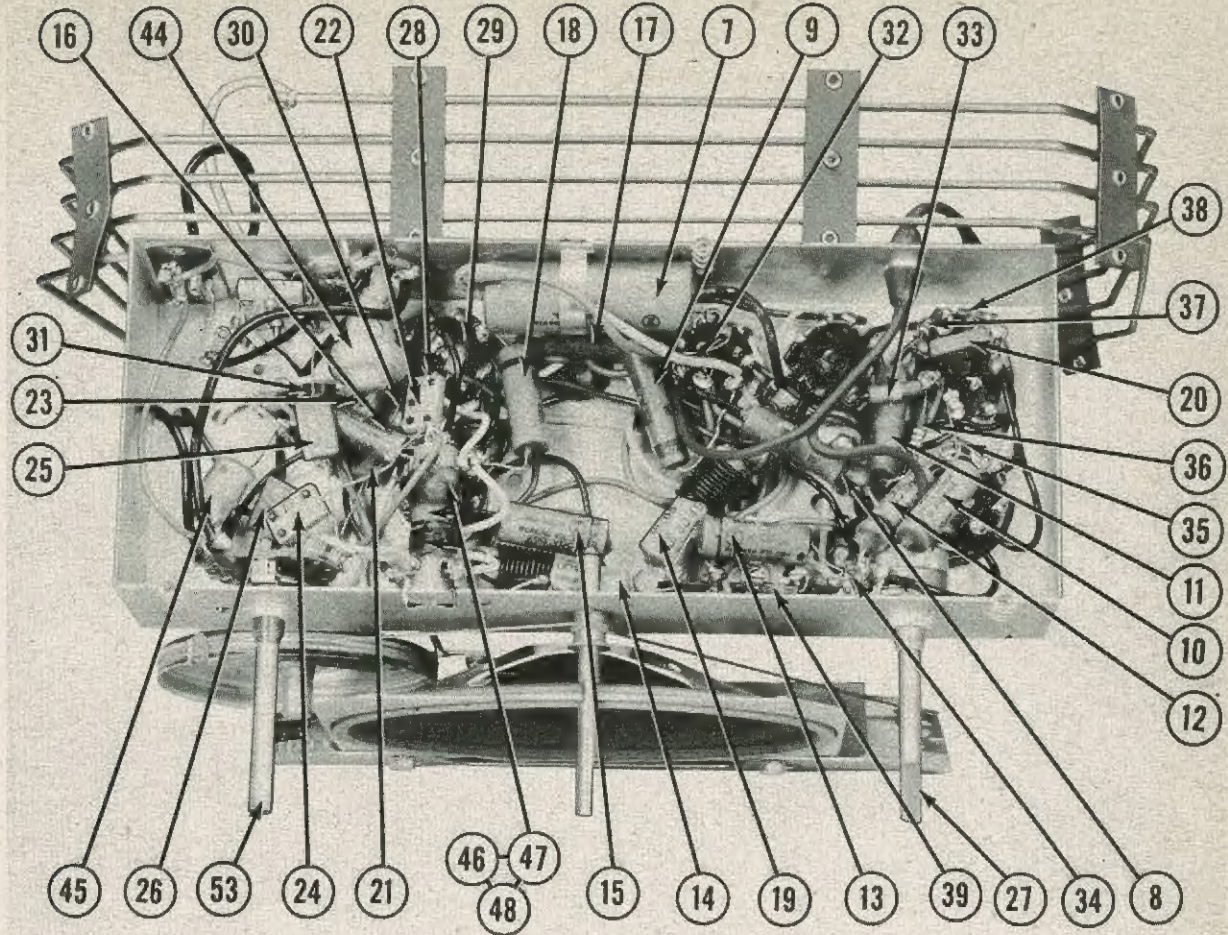
DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	REPLACEMENT DATA		INSTALLATION NOTES
				READ COLOR	PHILCO PART No.	
62	Bayonet	6-8	0.15	Brown	34-2038	#47

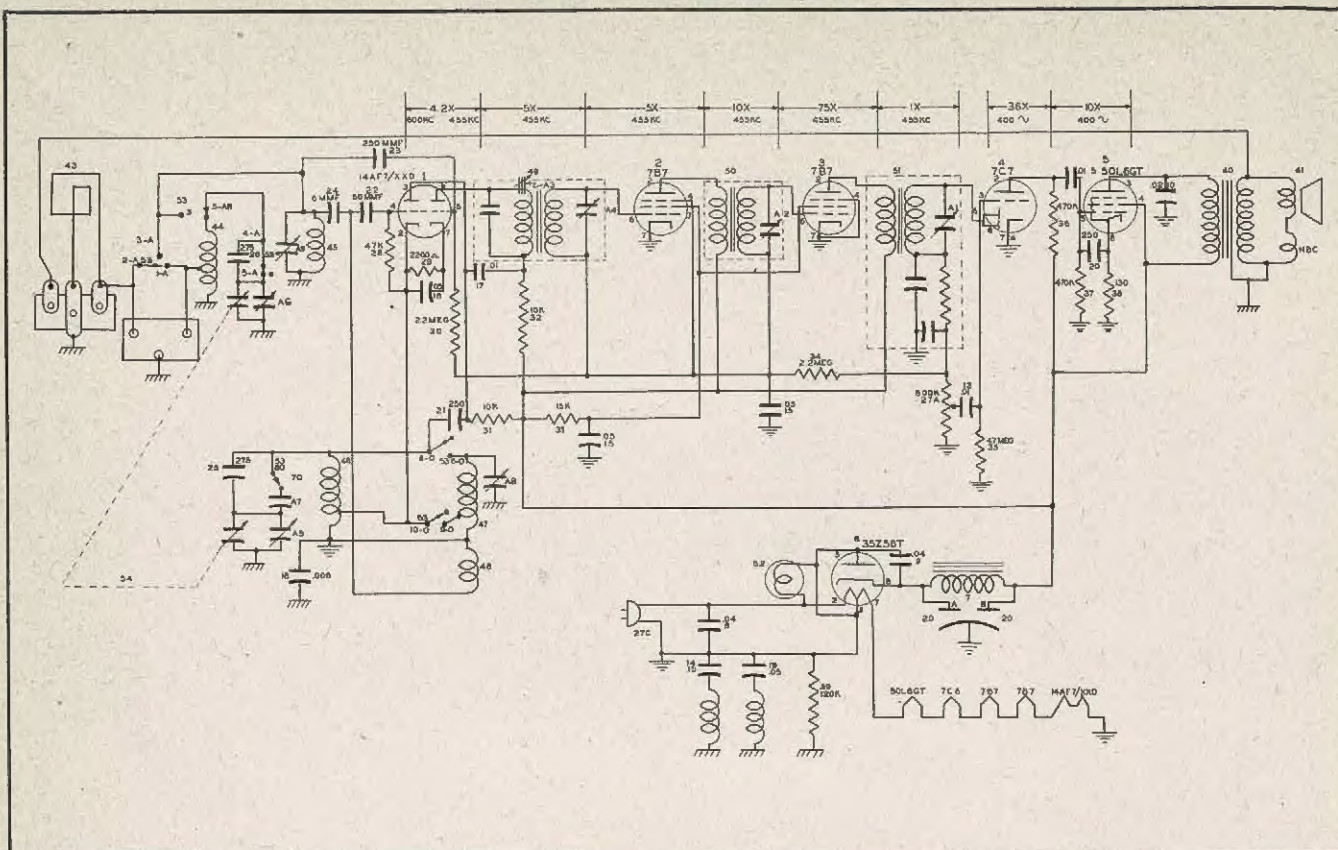
MISCELLANEOUS

ITEM No.	PART NAME	PHILCO PART No.	NOTES
53	Band Switch	M2-1772	
54	Tuning Cap.	31-2555	2 Gang Variable Capacitor
47	Trimmer	31-5453	Broadcast Osc. (Part of 31-8453)
48	"		Short Wave Osc. Ant.
49	Dial Knob Assembly	31-6423	Scale
		27-5895	Volume, Tuning & Band Switch
		54-4511	Walnut-Plastic Covered Wood Cabinet
		10650	

CHASSIS—BOTTOM VIEW

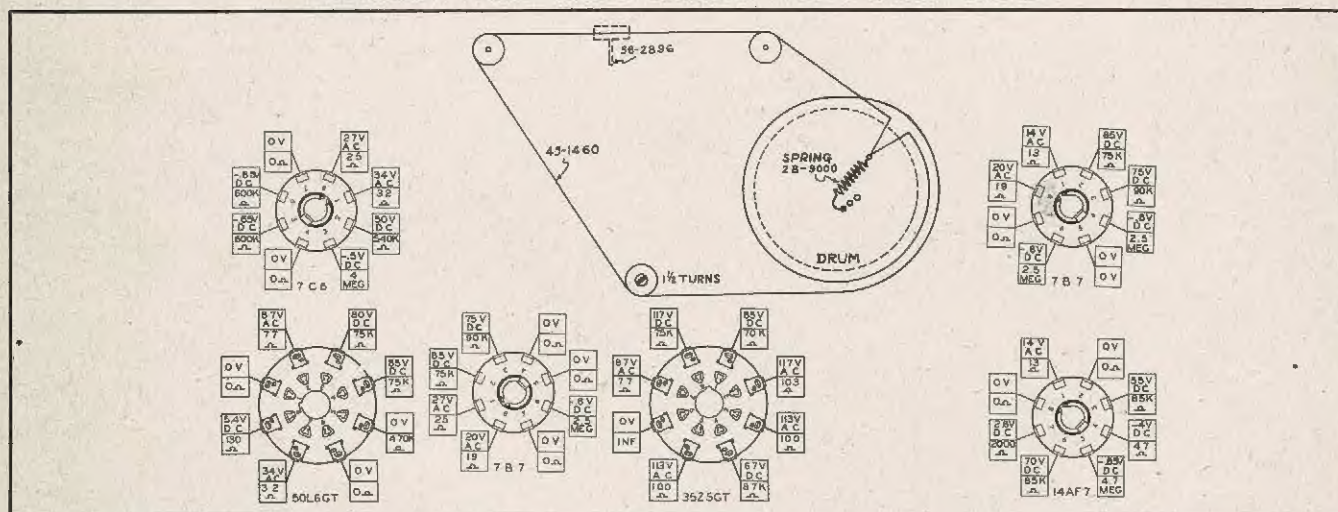


SCHEMATIC DIAGRAM



The stage gain measured values listed above are approximate values for average operative stages, rather than absolute values. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3 volt battery bias substituted for measurement.

VOLTAGE AND RESISTANCE ANALYSIS CHART



1. DC voltage measurements are at 20,000 ohms per volt; AC voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of $\pm 10\%$ in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

HOWARD W. SAMS & CO., INC.

2924 EAST WASHINGTON STREET • INDIANAPOLIS 6, INDIANA

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."

"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1946 by Howard W. Sams & Co., Inc., Indianapolis, Indiana, U. S. A. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc."